MICROMETRIC GUIDING APPARATUS TO MAKE OPTICAL LINKS

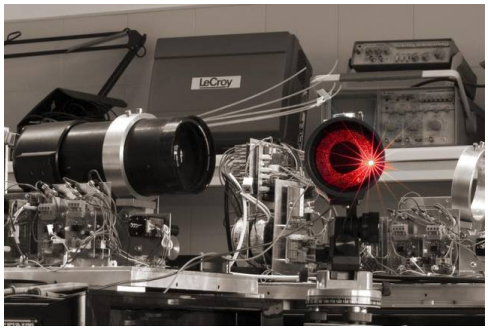
Description:

The present invention presents a mechatronic solution for the capture and precise guidance of laser beams with the aim of making optical links in free space. Thus, the guiding apparatus is formed by a mobile support that allows to house an optical system that contains a catadioptric reflector that receives light in its focal plane and a collimator that concentrates a laser beam to be transmitted. The mechanical structure contains an arrangement of gears that allow micrometric movement with two degrees of freedom, one azimuth and the other for elevation of the support, which houses the optical system. Angular movement is performed with microradian precision. In turn, the electronic structure consists of two stepper motors that can rotate through variable jumps and whose shafts move reduction gears of the mechanical structure. It also contains four electro-optical sensors that allow detecting limit switches in azimuth and elevation movements.

Keywords:
Laser, Telecommunications, Micrometric Guidance, Optical Links

Sectors:
ICT

Areas:
Telecommunications, Electronics, Internet and Networks



Advantages:

The main advantage of the present invention is that the apparatus points with precision and stability to directions of space that are between 100m and 2000m, supporting optical structures of capture (catadioptric reflectors) and emission (collimated laser beams) of up to 3kg.

Uses and Applications:

This invention belongs to the field of the electronic industry of high-speed optical communications in which modulated laser beams intervene, specifically the device presented here is part of the electromechanical industry in applications of precision optical instrumentation for targeting, directing and guiding. of light beams.

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